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Internationalising a currency: the case of the Australian dollar[1]

Asian policymakers are giving consideration to allowing their currencies to be used by non-residents. If policy allows this and a robust fixed income market provides support, the Australian experience indicates that a currency can internationalise fairly quickly, particularly if it offers a yield pickup.

JEL classification: F3, G1.

In Asia the transition of currencies from enforced insularity to international status is attracting attention. In May this year, the Korean authorities (Korean Ministry of Finance and the Economy (2006)) accelerated their schedule to liberalise the won and capital flows, thereby "facilitating the internationalisation of the won". In July, the Tarapore Committee of the Reserve Bank of India (RBI (2006)) devoted several paragraphs to the internationalisation of the Indian rupee.

This feature first defines an internationalised currency in terms of the domain of its use as a means of exchange and as a store of wealth. Then the path of the Australian dollar is traced from insular to internationalised currency. Policy permitted rather than encouraged this process. In addition, both domestic financial development and relatively high interest rates were important. The article concludes by briefly considering the effects of internationalisation on the exchange rate and bond yields. If the Australian experience is any guide, Asian bond yields can be expected to move more in line with those in major bond markets once currencies are internationalised.

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Defining and measuring an internationalised currency

An internationalised currency …

An internationalised currency can be defined as one that is freely traded against other currencies and used to denominate contracts, including bank accounts and bonds, outside its country of issue. In the bond market, internationalisation requires more than non-residents becoming important holders of domestically issued bonds: ie, the domestic bond market is taken to be fully internationalised only when non-residents figure as important *issuers* of bonds denominated in the domestic currency. In addition, an internationalised currency is used to denominate bonds sold outside its domestic financial markets, in offshore markets, by both domestic and foreign issuers who choose to tap non-resident investors. A telling sign of internationalisation is a non-resident issuer of a bond denominated in the domestic currency that is sold offshore to non-resident investors.

Australian dollar trading in the global foreign exchange market

… trades heavily offshore against other currencies …

Australian dollars are actively traded by non-residents. Like most major currencies, the Australian dollar trades more outside the home economy than

The geography of global foreign exchange trading

In billions of US dollars per day in April 2004

	Global trading	Domestic trading[1]	Offshore trading	*Memo: Offshore percentage*
US dollar	1,572.9	422.8	1,150.1	*73*
Euro	659.4	196.6	462.8	*70*
Yen	359.2	139.6	219.6	*61*
Sterling	299.4	209.5	89.9	*30*
Swiss franc	107.7	26.3	81.4	*76*
Canadian dollar	74.6	30.0	44.6	*60*
Australian dollar	97.1	39.4	57.7	*59*
New Zealand dollar	17.6	4.2	13.4	*76*
Chinese renminbi[2]	3.6	2.7	0.9	*25*
Hong Kong dollar	33.2	27.2	6.0	*18*
Indian rupee	6.1	5.4	0.7	*11*
Indonesian rupiah	2.1	1.8	0.3	*14*
Korean won	21.2	17.1	4.1	*19*
Malaysian ringgit	…	1.0	…	…
Philippine peso	0.8	0.6	0.2	*25*
Singapore dollar	17.0	10.8	6.2	*36*
New Taiwan dollar	7.3	4.1	3.2	*44*
Thai baht	3.5	2.3	1.2	*34*

[1] Domestic trading includes both onshore-onshore and onshore-offshore trading. [2] The 2004 survey captured only Shanghai interbank trading of the Chinese renminbi, leaving onshore trading not comparable to that of the other currencies. Ho et al (2005, p 53) estimate the domestic trading as at least $2.7 billion.

Source: BIS (2005), Tables E1 and E7. Table 1

within (Table 1).[2] That is, if one defines offshore trading in a currency as that between two non-residents, then such trades represent the major part of global transactions for major currencies. On this measure, the Australian dollar is as much an internationalised currency as the yen, although somewhat less so than the US dollar, euro or New Zealand dollar. Most Asian currencies other than the yen, including the rupee and the won, trade relatively little offshore.

The Australian dollar in the global bond market

... and attracts foreign investors and issuers

An internationalised currency also serves non-residents as a store of value whenever they buy or sell deposits or bonds denominated in the currency.[3] For the Australian dollar, this goes well beyond non-resident investment in the domestic bond market, where about half of the Australian Commonwealth bonds issued domestically in Australian dollars are held by non-residents. Non-resident investors have also enjoyed the convenience of Australian issuers selling Australian dollar bonds offshore (Table 2). A larger sum still has been raised by non-resident borrowers issuing Australian dollar bonds in the domestic market (foreign bonds known as "kangaroo bonds"). A yet larger sum has been raised by non-resident issuers of Australian bonds marketed to offshore investors. All told, Australian dollar bonds marketed offshore and kangaroo bonds amount to about 40% of Australian dollar bonds outstanding globally. (Taking account of non-resident holdings of domestic bonds issued by Australians would raise the international share above half.)

In an international comparison, the Australian bond market is more internationalised than most, but by no means the most internationalised (Graph 1, upper panel). After a generation of internationalisation, the yen bond

The Australian dollar in the global bond market

In billions of US dollars, at end-2005

Australian dollar bond issuers	Location of market		Total
	Australia	Offshore	
Australian	210	29	239
Others	39	78	117
Total	249	107	356

Note: According to BIS data, issuers of Australian nationality have $230 billion outstanding of bonds in other currencies, presumably mostly swapped. The Australian Bureau of Statistics reports foreign holdings of Australian bonds of $297 billion, including Commonwealth bonds of $22 billion.

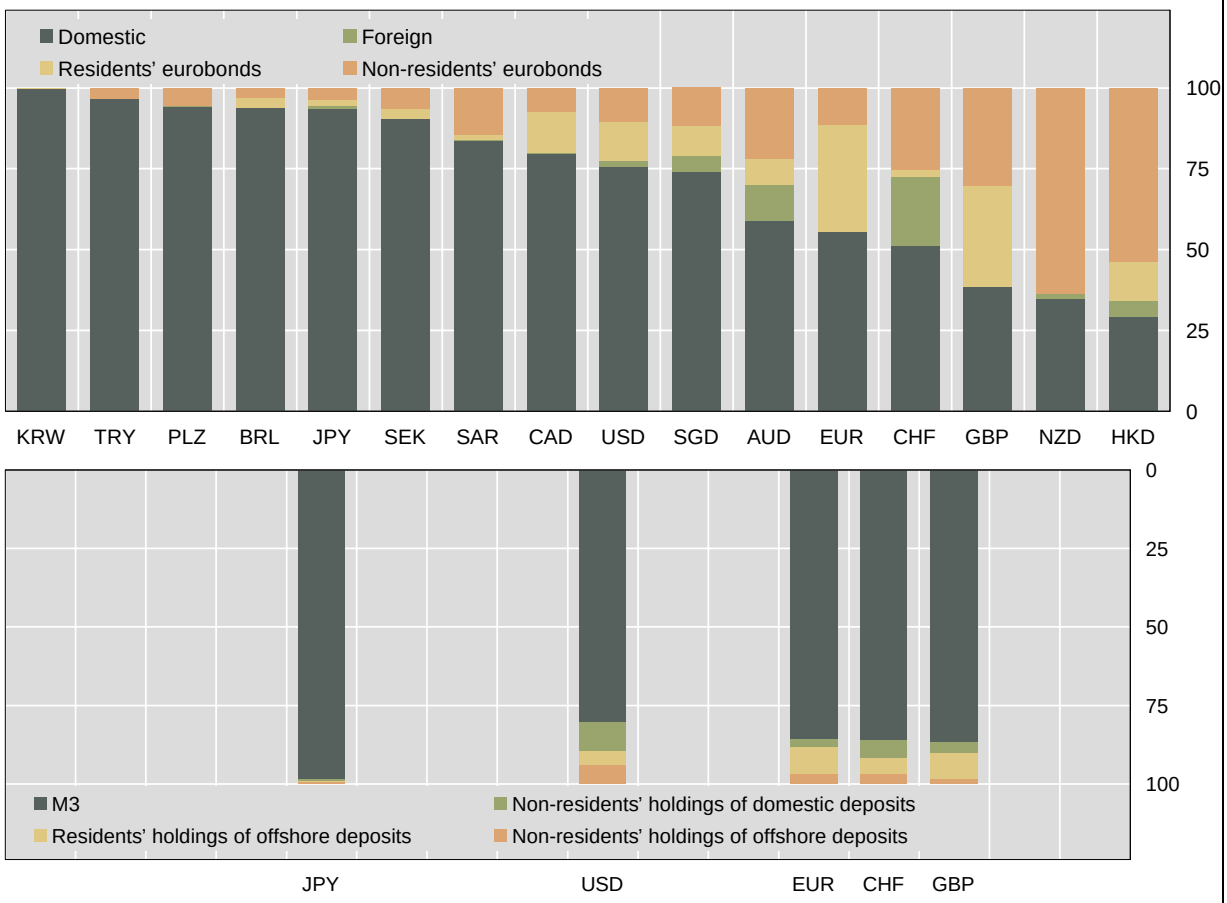
Sources: Dealogic; Euroclear; ISMA; Thomson Financial Securities Data; national authorities; BIS. Table 2

[2] Sterling, joined perhaps by the Hong Kong and Singapore dollars, offers an exception to this rule. This may be due to the pre-eminent role of London in the global foreign exchange market. The last four triennial surveys show that a high share of trading of major currencies consistently takes place between non-residents.

[3] Data on Australian dollar bank accounts held offshore are lacking, although some central bank holdings of Australian dollars are likely to be in this form. For example, the Riksbank (Sveriges Riksbank (2006)) targets a 5% share of foreign exchange reserves in the Australian dollar. For an indication that a portion of such holdings are invested in offshore bank deposits, see the rising liabilities of BIS reporting banks to official monetary authorities denominated in "other" foreign currencies in Table 5C of this *Quarterly Review*.

Selected currencies in the global bond and deposit market

At end-2005, in per cent



AUD = Australian dollar; BRL = Brazilian real; CAD = Canadian dollar; CHF = Swiss franc; EUR = euro; GBP = pound sterling; HKD = Hong Kong dollar; JPY = Japanese yen; KRW = Korean won; NZD = New Zealand dollar; PLZ = Polish zloty; SAR = Saudi riyal; SEK = Swedish krona; SGD = Singapore dollar; TRY = Turkish lira; USD = US dollar.

Note: The currency breakdown in the international banking statistics is limited to the currencies shown in the lower panel.

Sources: Dealogic; Euroclear; ISMA; Thomson Financial Securities Data; national authorities; BIS. Graph 1

market remains overwhelmingly domestic (Nishi and Vergus (2006)). The US dollar bond market likewise remains heavily domestic, albeit with non-residents holding a substantial fraction of domestic bonds. Only the euro and sterling bond markets, among major currencies, and the Swiss franc, New Zealand dollar and Hong Kong dollar bond markets, among smaller currencies, have a relatively larger offshore and foreign component than the Australian bond markets.

For other Asian bond markets, however, things look much different. The large Korean won bond market, for instance, remains very local. There have been at most scattered offshore issuance and a few foreign bond issues by international financial institutions and multinational corporations.

While no data are available on offshore deposits in Australian dollars, the evidence for the major currencies in the lower panel of Graph 1 suggests that only a small proportion of Australian dollar deposits are held offshore. Thus, measured internationalisation is highest for currency trading, moderate for bond markets, and low for deposits.

From insular to international currency

The Australian dollar's transition from an initial insularity to the current state of internationalisation took about a decade. The development of derivatives markets, and in particular the currency swap market, played an important role against the background of the Australian dollar's yield advantage over the US dollar. In addition, whereas a withholding tax was levied on coupon interest paid by domestic bonds, a broad exemption applicable to offshore issues gave the latter an extra source of support.

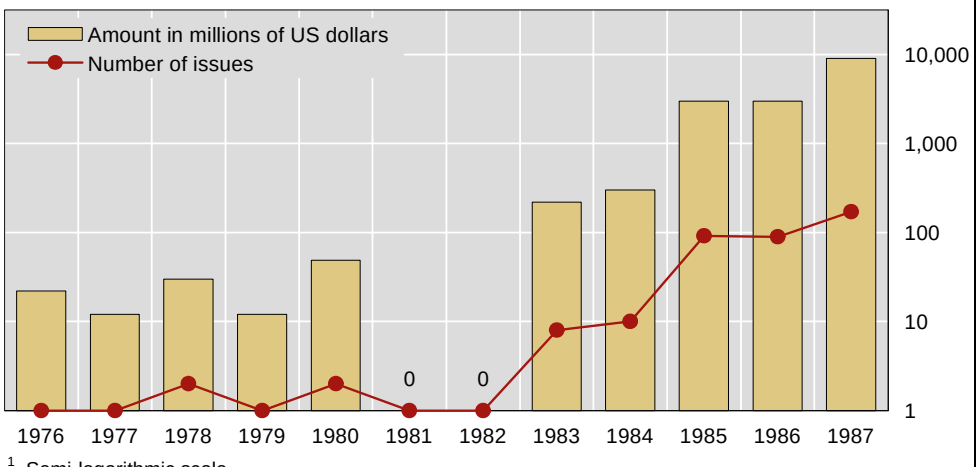
Insularity

Policy kept Australia's dollar at home and financial markets closed …

Australia's foreign exchange, money and bond markets in the 1970s and early 1980s remained quite insular. This was a policy choice in service of a succession of exchange rate regimes from bilateral peg through basket peg to basket crawl (Debelle and Plumb (2006)). In general, the Australian dollar was not used outside the country. Capital controls required exporters to surrender foreign exchange and generally restricted Australian portfolio investment abroad. The Reserve Bank of Australia limited forward cover to trade transactions. Banks were prohibited from paying interest on deposits of non-residents, and non-resident banks and governments were restricted to minimum working balances in order "to discourage the development of a reserve currency role for the Australian dollar" (Campbell Committee (1981, page 147)). Withholding taxes deterred investment in domestic bonds.

Even in this period, however, there were policies and practices that looked forward to a less insular future. First, in 1976–80, there were seven small Australian dollar issues offshore, in amounts between A$10 and 15 million (Graph 2). Sold to Benelux and Middle East investors, these resembled private placements. Dealers could not readily hold and fund inventory given the above restrictions and the consequently limited supply of offshore Australian dollar funding (Burnett and Kerr (1984)). Second, when the Australian dollar was under upward pressure the authorities did permit selected portfolio outflows.

Issuance of Australian dollar eurobonds[1]



[1] Semi-logarithmic scale.

Sources: Burnett and Kerr (1984, p 115); Gallant (1988, p 100). Graph 2

Third, the authorities permitted an onshore non-deliverable forward market to develop. Settled in Australian dollars, this market was in some ways the mirror image of the non-deliverable markets in Asia, where offshore players settle their side bets in dollars (Ma et al (2004), Debelle et al (2006)).

Opening

… until the currency float allowed issuance of eurobonds by top-rated Australians …

The Australian dollar was floated in 1983 and the capital controls that had buttressed the former regime were dismantled. Subsequently, an Australian dollar deposit market, integrated with the spot and forward foreign exchange markets, developed in London, Hong Kong and Singapore.[4] After a depreciation of the Australian dollar in early 1983, the Australian dollar eurobond market reopened with a A$20 million five-year offering from Primary Industry Bank of Australia. The issue yielded some 3 percentage points more than US dollar bonds but a full 1 percentage point less than did the Commonwealth of Australia's domestic five-year bond. Withholding taxes on sovereign bonds onshore left offshore investors willing to accept lower yields from inferior credits marketed offshore.

… followed by global issuers looking for swap opportunities

During the mid-1980s, the representative issuers in the Australian dollar sector of the eurobond market shifted. Early issuers in the 1970s and early 1980s were Australian names. As late as 1985, the top four issuers were two Australian banks, an Australian retailer and an Australian agency (Table 3). The following year, however, in response to demand shifting from Benelux retail buyers to Swiss and German buyers (Beard (1985)), German banks capitalising on their name recognition became two of the top five issuers. By 1987, most large Australian dollar eurobonds were issued by high-quality issuers with little or no intrinsic need for Australian dollar funding.

Top five issuers of Australian dollar eurobonds

In millions of US dollars

1985		1986		1987		2005	
Issuer	Amount	Issuer	Amount	Issuer	Amount	Issuer	Amount
ANZ Banking	142	IBM Australia	143	Deutsche Bank	491	New South Wales Treasury	2,792
Commonwealth Bank	100	Deutsche Bank	102	IBJ Australia	321	IBRD	2,652
GJ Coles	84	Commonwealth Bank	100	Westlb Finance	246	Bank Nederlandse Gemeenten	1,673
Austr Ind Dev Co	82	GMAC Australia	80	IBRD	242	Crusade Global Trust	1,425
Security Pacific	74	Hamburg Landesbank	72	SEK	218	Rabo Bank	1,112

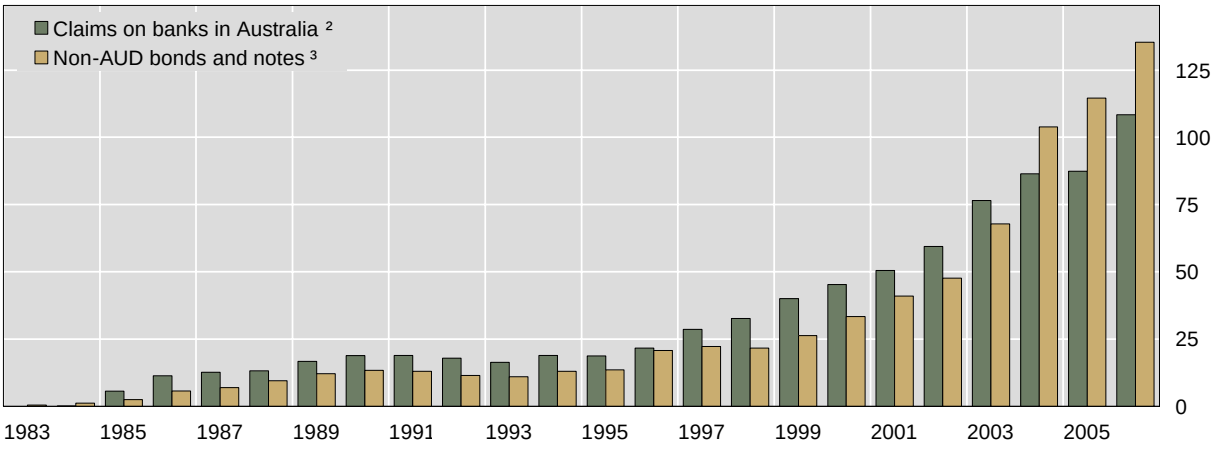
Sources: Gallant (1988, p 100) for 1985-87; BIS for 2005. Table 3

[4] As late as 1983, settlement in the Australian dollar eurobond secondary market still tended to be made in US dollars (Burnett and Kerr (1984, p 116)). Manuell (1986, p 45) alludes to the second-order exchange risk run by Australian borrowers offshore "because of the necessity for Australian dollar funds to be received or paid via the US dollar".

Box: An example of a swapped offshore Australian dollar bond

1. AAA-rated German agency KfW sells an Australian dollar bond that is heavily marketed to Japanese households (under so-called *uridashi* rules).
2. KfW swaps the proceeds, namely a fixed rate obligation in Australian dollars, with an underwriter for floating rate US dollars; KfW meets its funding target at an attractively low yield below dollar Libid.
3. An Australian bank borrows floating rate US dollars from a bank or by selling a US dollar bond and swapping the proceeds for floating rate US dollars (see graph below).
4. The Australian bank swaps its liability in floating rate US dollars with the underwriter for a fixed rate obligation in Australian dollars.
5. The Australian bank lends to an Australian firm in fixed rate Australian dollars.
6. In sum, AAA-rated KfW has sourced Australian dollar funding from Japan for a second-tier Australian firm.

Australian banks' interbank liabilities and outstanding foreign currency bonds[1]



[1] In billions of US dollars. [2] Consolidated international claims of BIS reporting banks (1983 to 2006 Q2). [3] International bonds and notes issued by banks in Australia (1983 to 2006 Q2).

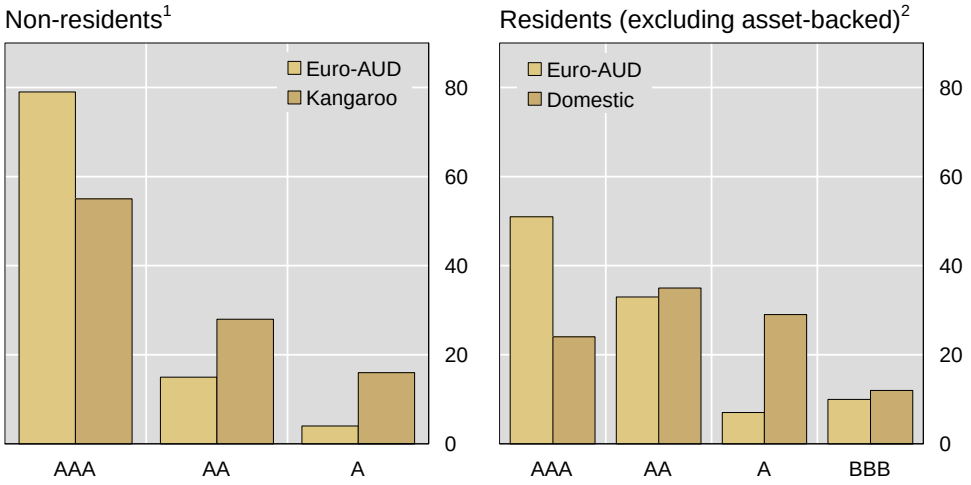
Sources: Dealogic; Euroclear; ICMA; Thomson Financial Securities Data; BIS consolidated banking statistics.

The pattern set in 1987 essentially holds to this day. While the largest state in Australia, a home-grown top credit, topped the list of issuers in 2005, the top five issuers included the World Bank and two Dutch banks. Issuance by a vehicle backed by Australian residential mortgages, namely Crusade Global Trust, points to more recent developments in asset securitisation. Instead of a bond issued by an Australian bank, offshore institutional investors bought a bond backed by the obligations of Australian households to an Australian bank.

The development of the cross-currency swap market played a key role in the internationalisation of the Australian dollar bond market. Without such swaps, the high demand for credit quality on the part of the buyers of Australian dollar bonds would have run up against the limited roster of top-quality Australian borrowers. Instead, top global issuers have been induced by favourable all-in costs of US dollar funding to issue and to swap. As the box illustrates, the cross-currency swap market caters to the preference of the end investor in offshore Australian dollar bond issues for top-quality names. In effect, a chain of banks and swaps links the saver and the ultimate borrower.

Against this background, the nascent offshore market for Korean won issues seems to be taking a different path. Prime Australian names opened the

Onshore and offshore issuance by Australian residents and non-residents, by rating



[1] As a percentage of outstanding issues in each market. [2] In per cent by value; covers only issues in 2005 and 2006.

Sources: Reserve Bank of Australia; BIS. Graph 3

offshore Australian dollar market before the days of currency swaps and to this day Australian names figure prominently. At the outset, the Korean won market instead features foreign financial issuers, seeking cheap US dollar funding. As the market for Korean won issues widens, the investor preference for top quality may become more important. Given Korea's single-A rating, foreign issuers may come to dominate the offshore won market, much as they do in smaller markets like New Zealand's (Drage et al (2005)), Ólafsson (2005)).

An international Australian dollar market

Internationalised market based on …

By the end of the 1980s, the Australian dollar had made the transition to an internationalised currency. Four characteristics mark what is now a thoroughly internationalised Australian dollar bond market: its grounding in the domestic fixed income market; the demand for quality among international investors in Australian dollar paper; the importance of the cross-currency swap market; and the importance of yield to international investors. Consider each in turn.

… strong domestic market …

The internationalised Australian dollar bond market depends on a well functioning set of domestic markets. In the early 1980s, government bond issuance through taps gave way to auctions, and the government ceased to have recourse to the central bank. Even as the offshore market developed, the domestic government bond market attracted international investment.[5] Though not large, the cash government bond market supports a 10-year government bond futures contract that performs a critical role in price discovery. In addition, well developed interest rate swap and currency swap markets link domestic

[5] As early as in Burnett and Kerr (1984), Japanese institutional investors are described as involved in Australia's domestic bond market, in contrast to continental European retail investors who were willing to accept lower yields on Australian dollar eurobonds than on domestic Commonwealth bonds. Gallant (1988, page 98), by contrast, describes Australian Commonwealth bonds as "actively traded in London".

and international markets (see below). While withholding tax remains on most foreign investment in most domestically issued bonds, whereas offshore issues of bonds are exempt, this impediment to foreign investment in the domestic market may actually have encouraged resident issuers to issue offshore.

... strong quality selection by offshore investors ...

As noted, foreign investors in Australian dollar bonds can avoid credit risk even as they accept currency risk. In fact, the issuers who have chosen to sell Australian dollar bonds offshore have been of the highest quality. This can be confirmed by a comparison of ratings (Graph 3) assigned to eurobonds sold by either non-Australians or Australians (targeted to foreign investors) and the foreign and domestic bonds sold in Australia (targeted to domestic investors). This comparison is apt because both sets of issuers are drawn from the same universe. The bias towards quality in the offshore issues is very clear. This quality bias to offshore issues in the case of the Australian dollar issues stands in sharp contrast to a general finding that lower-quality Australian names issue bonds outside Australia (Battellino (2002)). This reflects the greater openness of the global US dollar bond market to low-rated paper.

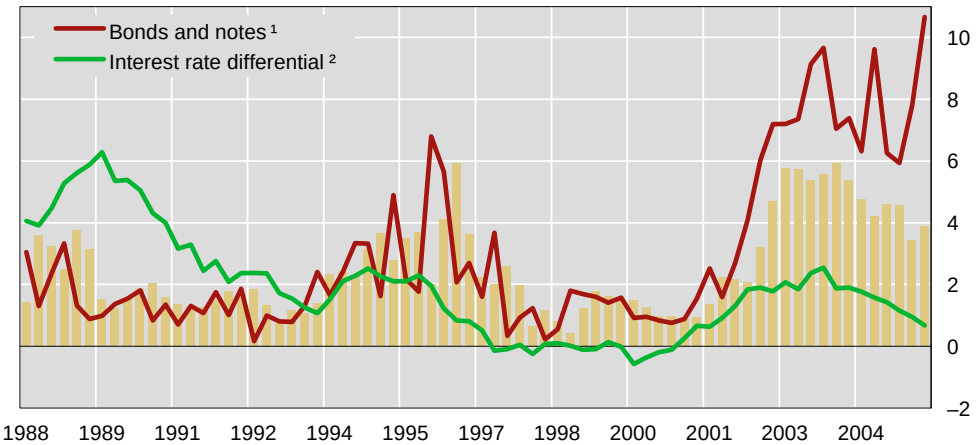
... an active currency swap market ...

As a result of the strong demand for credit quality by offshore investors, the currency swap market plays a crucial role. Most observers judge that the entirety of Australian dollar bond issues by non-residents, $117 billion (Table 2), is swapped and is thereby ultimately serviced by the Australian private sector (Australian Bureau of Statistics (2001)). On this supposition, at least a third of the Australian bond market depends on currency swaps.

... and a yield pickup

Finally, overseas demand for Australian dollar paper, as for bonds denominated in other currencies (Cohen (2005)), responds positively to the interest rate premium offered. Australian dollar issuance dried up in 1981–82, when US interest rates rose sharply against a backdrop of relatively stable Australian rates (Graph 2). Gallant (1988, page 99) suggests that "investors look for good quality credits issuing paper with coupons around 5% more than a comparable issue in US dollars". Of course, such spreads reflected inflation

Offshore issuance of Australian dollar bonds and notes



[1] Announced gross issuance in billions of US dollars; the bars represent the values as a percentage of GDP; two-quarter moving averages. [2] Australian dollar five-year interest rate swaps less US dollar five-year interest rate swaps; quarterly averages, in per cent.

Sources: Bloomberg; Datastream; Dealogic; Euroclear; ISMA; Thomson Financial Securities Data; national data; BIS. Graph 4

differentials that have since disappeared, leaving the Australian yield premium subject to cyclical developments. Thus, offshore issuance by both non-residents and residents weakened in 1997–2000 as yields converged. After US interest rates fell to extraordinarily low levels in 2001–03, the issuance of higher-yielding Australian dollar bonds rebounded once more (Graph 4).

Implications for the currency and interest rates

By making capital more mobile, the internationalisation of the Australian dollar (Blundell-Wignall et al (1993)) affected the currency and long-term yields. The discussion takes up first the level then the volatility of each.

Foreign investment demand makes for a stronger currency …

The internationalisation of the Australian dollar has, on balance, probably strengthened its exchange rate over the years. This conjecture is based on the idea that the Australian dollar's internationalisation is asymmetric, in that it has drawn international investment, but rarely international borrowing, to the currency. This is a case of "lopsided internationalization", which Sakakibara and Kondoh (1984) feared might characterise the yen. In contrast, the US dollar and euro attract not only outside investors, but also borrowers who do not hedge their liability positions. This leaves ambiguous the effect of these currencies being used internationally (McCauley (1997)). Most observers consider that the Australian dollar, with exceptions such as in early 1998 (FSF (2000)), has primarily attracted long positions (even if some of them, such as those held by Japanese life insurers, may be variably hedged).

… and lower yields …

On this same reasoning, the internationalisation of the Australian dollar may, on balance, have reduced Australian dollar long-term interest rates over the years. In fact, the internationalisation of the Australian dollar was associated with a shift in the composition of capital inflows from direct investment to bonds (Tease (1990)). Since most home mortgages in Australia are at floating interest rates, the stimulative effect of this development may have been largest in the corporate sector. Indeed, Gallant (1988, page 98) reported that Australian firms had then to look offshore for "most medium-term funding". Onshore funding opportunities have improved since then, but the offshore bid may still weigh on Australian bond yields to the benefit of the corporate sector.[6] Of course, to the extent that the Australian dollar has been stronger, policy rates have been lower, making mortgages more affordable. In New Zealand, by contrast, because of the recent shift to mortgages priced off two- or three-year interest rate swaps, the housing sector has benefited from the offshore demand for New Zealand paper (Drage et al (2005)).

… but also possible currency volatility at bond maturities …

Regarding volatility, observers worry that a waning of international demand can lead to periods of currency instability. A particular concern focuses on downward pressure during periods when Australian dollar yields have converged to US dollar yields. In such circumstances, offshore investors can be less inclined to roll the funds from maturing offshore Australian dollar

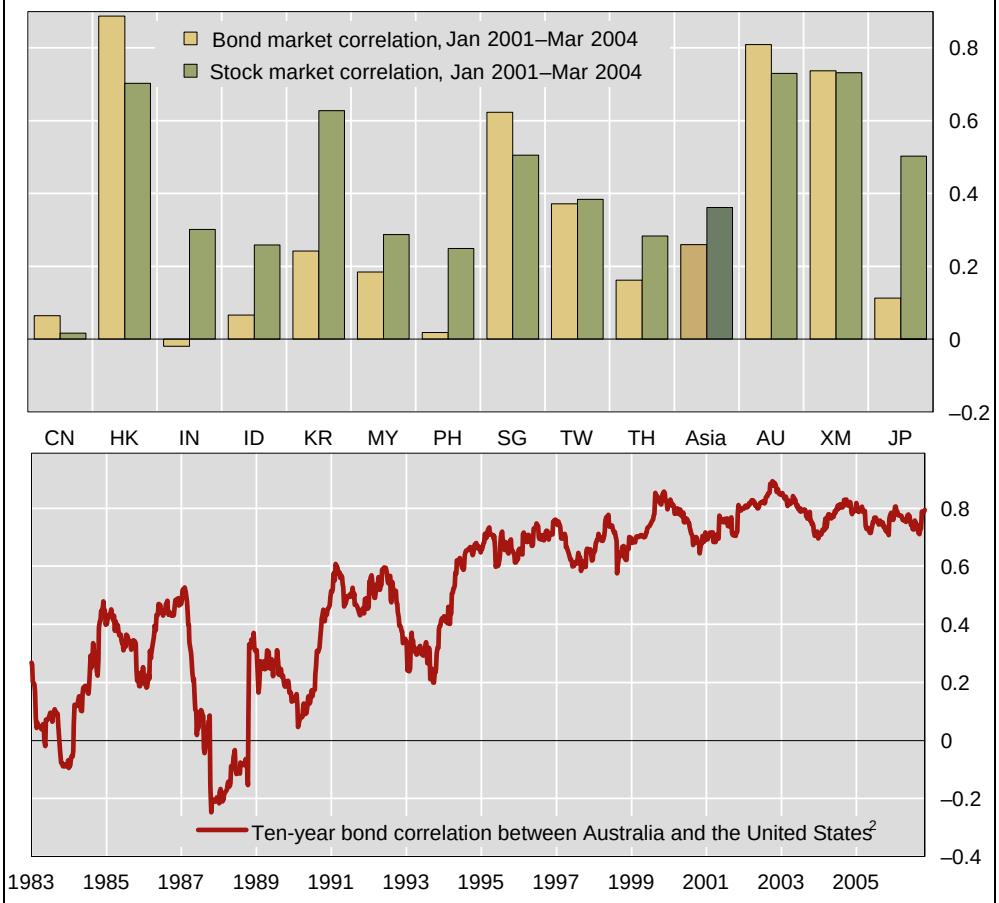
[6] In the case of Iceland, Ólafsson (2005, page 75) holds that demand for domestic currency eurobonds has "dampened the effectiveness of Central Bank monetary policy across the yield curve" and thus strengthened the exchange rate channel of monetary policy transmission.

issues into new ones. Of course, offshore issues can be bought by Australian investors before maturity, and by the same token non-residents can sell holdings of domestic bonds. Still, the Statement on Monetary Policy of the Reserve Bank of Australia ((RBA (2006)) gives attention not only to the pace of sales of Australian dollar bonds offshore, but also to the schedule of upcoming maturities of such bonds outstanding, as providing a clue to the near-term currency volatility.[7] That said, any effect of internationalisation on volatility is likely to be minimal compared to the effect of the policy stability conditioned by the structure of the economy (Simon (2001)).

… and more shared volatility in bond yields

As for the volatility of bond yields, internationalisation may heighten common movements at the expense of country-specific movements. Today, the Australian bond market moves closely with major bond markets (Graph 5, upper panel). Price discovery in the Australian bond market takes place to a

Bond and stock market correlations[1]



AU = Australia; CN = China; HK = Hong Kong SAR; ID = Indonesia; IN = India; JP = Japan; KR = Korea; MY = Malaysia; PH = Philippines; SG = Singapore; TW = Taiwan, China; TH = Thailand; XM = euro area.

[1] Based on weekly changes in benchmark yields (stock price indices) at Thursday closing for Asia and the Pacific and Wednesday closing for US Treasuries (S&P 500). [2] Based on weekly changes in yields at Thursday closing for Australia and Wednesday closing for the United States; rolling window of one year.

Sources: McCauley and Jiang (2004); Bloomberg. Graph 5

[7] Efforts to identify the effect of issuance and maturities in the case of the New Zealand dollar have not found statistically significant effects (Drage et al (2005)).

considerable extent outside Australian trading hours. As reviewed by Kearns (2006), US news, arriving in the overnight gap between Sydney close on one day and Sydney opening on the following day, has more effect on bond yields than Australian news. Not even the substantial cyclical differences between the Australian and the US economies that emerged five years ago seriously disturbed the coupling of long-term interest rates. Updating Kortian and O'Regan (1996), the lower panel of Graph 5 shows that the Australian bond market had at the time of its opening no more connection to the US bond market than a number of Asian bond markets have today. Asian policymakers already have some experience with openness to global factors in their equity markets. The internationalisation of their currencies could similarly increase the correlation of their bond markets with the US Treasury market.

Conclusion

Judging from the Australian experience, a currency can make the transition from extensive controls designed to restrict its use to domestic residents to the status of an internationalised currency in a relatively few years. The process is permitted by a removal of various restrictions but is also encouraged by a vibrant domestic fixed income market on which a range of derivatives markets can be based. Indeed, the potential for development of these latter markets (Hohensee and Lee (2006)) probably means that internationalisation of a currency can happen more quickly now than in the 1980s.

The relevance of Australia's experience may also depend on the prospective interest rates on any Asian currencies that are opened up to the world. Non-resident demand for Australian dollar bonds has waxed and waned with the interest rate differential. So, too, Asian currencies with higher coupons might internationalise more rapidly than currencies with relatively low coupons.

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